MINISTRY OF HEALTH

Central Health Services Council

STANDING DENTAL ADVISORY COMMITTEE

Dental Technicians

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Central Health Services Council
Standing Dental Advisory Committee

REPORT OF THE SUB-COMMITTEE ON DENTAL TECHNICIANS

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R. G. Swiss Esq., O.B.E., L.D.S.R.C.S., J.P.

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T. G. Ward, Esq., C.B.E., D.D.SC., F.D.S.R.C.S.
R. Miller Yardley, Esq., L.D.S.

Secretary

A. J. Martinsen, Esq.

1. The Standing Dental Advisory Committee, aware of mounting concern throughout the dental profession at the continuing difficulty of maintaining a stable work force of qualified dental technicians, appointed us in November 1966 to consider the extent of the problem, to identify its underlying causes and likely consequences for dentistry, to suggest practical solutions to the difficulties which the profession currently is facing and to report.

2. We met on five occasions, and although we did not formally invite evidence from the public we received much valuable help and assistance from hospital authorities, dental teaching schools, the National Joint Council for the Craft of Dental Technicians, the Ministry of Health and individual members of the profession. We are particularly grateful to the National Joint Council for allowing us to use their Register of Technicians as the basis of the enquiry we conducted into the age structure of the craft.

3. Any discussion about dental technicians appears to start from the assumption that there is a general shortage which, if ways and means of overcoming it are not found, will quickly lead to a breakdown in the country's dental services. Although many solutions are prepounded, the main ones are intervention by the Minister of Health and higher pay for dental technicians generally.

4. It is not sufficiently realised that the Minister's powers to intervene in this field are very limited. The majority of dental technicians are employed by general dental practitioners and commercial laboratories and have no direct relationship with the Minister or his Department. Indeed the only technicians whose careers the Minister could influence directly are the relatively small proportion who work in the hospital and special service whose pay and conditions of service are determined by the Professional and Technical Whitley Council 'B', which includes representatives of the Ministry of Health. It is of course part of general dental practitioners' terms of service that technicians whom they employ shall be given rates of pay and terms of service no less favourable than those fixed by the National Joint Council. But the Minister has no statutory powers to influence rates of pay and terms of service, to contribute towards the expenses of or to make available facilities for the training of apprentice technicians outside the hospital service. His statutory responsibility for general dental services are confined to arranging through Executive Councils for dentists to provide such treatment as is necessary for dental fitness for those patients who seek it. His concern is to ensure that as many patients as possible within the limits of available dental manpower receive the treatment they need to make them dentally fit: the means by which dentists achieve this end are not matters in which he can intervene.

5. As independent contractors dentists are paid for the end product, the fees for which include an element to cover the laboratory and workshop costs involved as well as the general overhead expenses of the practice. This system allows the individual practitioner freedom to choose the kind of practice organization he prefers, but at the same time imposes on him a responsibility for recruiting and training his own ancillary staff. Because of his responsibility for recruiting and maintaining ancillary staff adequate for the needs of his practice the individual practitioner must compete with other employers in the first place for the services of school leavers and subsequently for the services of qualified staff. If he fails either to retain the services of his staff or to recruit suitable replacements the responsibility is primarily his.

6. Similar considerations apply to the Minister in his responsibility for the hospital dental service. If it is necessary, in order to provide the people of this country with an adequate hospital dental service to provide consultants and specialists with the ancillary and technical resources they need, the Minister through his agents, the hospital authorities, must compete with other employers in the same way as practitioners in private practice. Apprentices must be trained and trained staff must be offered a satisfying career, adequate pay and reasonable promotion prospects. To the extent that the hospital service on the one hand and general practice on the other is either losing technicians or failing to fill vacant posts, it is arguable that there is or soon will be a shortage which could have serious consequences for the future of dentistry in this country.

7. Any valid assessment of shortage must be based on an acceptable measurement of the average work-load of a qualified technician. So far as the hospital service is concerned no such criterion exists: we have to fall back, therefore, on the fact that 342 dental technicians of all grades including apprentices were employed in the hospital service (excluding those employed by the Universities in teaching hospitals) at 31st March 1966; reports from hospital authorities indicate that 70 posts were vacant at that time and that an additional 230 technicians would be needed by 1969 in order to give full effect to the recommendations of the Joint Working Party on the Medical Staffing Structure of the hospital service and to ensure that dental students receive adequate experience and instruction on prosthetic work. In the absence of criteria for measuring staffing requirements accurately these figures must be viewed with caution. One thing is certain, however, that under the present system of employment there is little prospect in the next two years of doubling the number of dental technicians currently employed in the hospital service.

8. The introduction of the N.H.S. in 1948 influenced profoundly the character of dentistry in this country. Before 1948 comprehensive dental care was a comparative luxury enjoyed by those who could afford to pay for it, and consequently a great many dentists spent their working lives extracting and replacing teeth with dentures, rather than in conserving them. In order to meet this demand for dentures dentists employed technicians or mechanics who usually, though not invariably, worked in small workshops or laboratories attached to or on the dentist's practice premises. It was not unusual for a dental mechanic to start as an apprentice, to learn his craft from the dentist who employed him or from a senior mechanic whose job he could in the fullness of time expect to take over. Recruited, trained and employed largely as single-handed craftsmen by single-handed practitioners, dental technicians were difficult to organize in any professional association or trade union. Hence comparatively little is known about their numbers, training, experience or conditions of employment in pre-war days. Most dental surgeons, who were in practice before the advent of the Health Service, would probably claim that they were in general well served by skilled mechanics; to some extent this must be a biassed view since the majority of mechanics had been trained by the dentist himself to cater primarily for his personal requirements. Thus while mechanics were generally competent and some of them highly expert the range of technical skills at their command was conditioned largely by the type of prosthetic work undertaken by their employers. With some exceptions this was mostly the provision of vulcanite dentures: demand for more advanced appliances such as crowns and inlays was com-

paratively small and restricted in the main to the more prosperous parts of the country.

9. Wartime service with the Armed Forces offered many citizens of this country their first experience of dental fitness and awoke them to an awareness of the benefits both to health and general well-being of regular treatment. The Services themselves trained a number of technicians expert in the construction of straightforward dentures but with relatively little experience of more sophisticated appliances.

10. After the war with the introduction of the Health Service the demand for dentures arose to an unprecedented level. (In the year April 1950 to March 1951 dentists practising in the general dental service provided 1,698,000 full upper and lower dentures and 1,084,000 partial dentures, and crowned 26,000 teeth. One of our difficulties is that there is no compulsory registration scheme for dental technicians nor is it easy to define the term 'dental technician' and we have no accurate figures of the number of technicians in this country, but according to the National Joint Council for the Craft of Dental Technicians it is estimated that in 1951/52 there were 7,000 trained technicians and 2,500 apprentices in training working in the general dental service.) It is clear from a comparison of these figures that the majority of this labour force was engaged in a limited range of work.

11. The introduction of the denture charge in 1951 led to an immediate reduction in the total volume of prosthetic work undertaken in the general dental services. In the year ended 31st December 1952 the number of full upper and lower dentures provided to general dental service patients fell to 604,000 and the number of partial dentures to 685,000 and in the year ended 31st December 1966 the number of dentures provided under the service, including 36,000 metal dentures, (1,608,000) represented only 58 per cent. of the number provided in 1950/51. Even allowing for the possibility of a significant switch of demand for dentures from the general dental service to private, hospital or local authority services there has clearly been a substantial decline in the overall demand for dentures. That this was recognized by the profession is demonstrated by the progressive decline over the same period in the numbers of technicians employed in the general dental service and, perhaps more significantly, in the number of apprentices recruited. By 1966 the numbers estimated to be working in the general dental service had fallen to 5,300 trained technicians and 450 apprentices in training, declines of 25 per cent. and 80 per cent. respectively from the peak figures of 1952.

12. It is inevitable that the work force of any industry for whose principal product there is a permanent falling off in demand will eventually be reduced. Provided the average age of trained technicians is not too high the most economic way of cutting technical staff to a level commensurate with the reduced demand for the services they provide is by severely restricting recruitment of apprentices. The results of a sample enquiry we made of the age distribution of technicians both in the hospital and general dental services shows that the majority of technicians are under the age of 44. Moreover, the greatest number are in the age group 30–39 which suggests not only that they were recruited and trained in the early years of the National Health Service but that the gradual reduction in the total number of technicians over the last 15 years has been effected largely by normal wastage due to retirement.

13. In spite of this reduction in the total number of technicians available to the general dental service there are probably still more than enough pairs of hands to satisfy the demand that traditionally has been made of dental technicians. If in 1950/51, 7,000 trained technicians were able without any reported difficulty to produce 2,782,000 dentures and at the same time to supervise 2,500 apprentices it must be well within the competence of 5,300 trained technicians to produce 1,608,000 dentures and supervise 450 apprentice technicians.

14. Why then is it alleged that the service is in danger of collapsing because of a shortage of trained technicians? Although we cannot prove this definitely we believe that, so far as the general dental service is concerned, it is because there is a shortage of technicians experienced in the manufacture of crowns, inlays, bridges and orthodontic appliances, the demand for which has grown slowly but steadily over the last decade to its present level. The problems of the hospital service and of dental schools are undoubtedly infinitely more serious. It is the task of the former to provide for the community a specialist service and level of competence and skill supplementary and superior to that normally expected of the general dental service, and of the latter to provide dental students, the dentists of the next generation, with a thorough grounding and experience in all forms of dentistry. The hospitals and schools not only treat the more complex and difficult cases but also carry out research and encourage the development of professional skill and knowledge. It is essential, therefore, that the consultants, specialists and teachers should be supported by technicians as experienced and skilled in their own craft as are the dentists they serve in theirs.

15. We are convinced from our own experience that today both dental hospitals and schools are unable to command technical support of the level and competence they consider essential. A considerable increase in accidents involving trauma to the facial bones is known to have occurred over the past five years. These injuries are treated by consultant dental surgeons who report that treatment is impeded by their not being able to have the necessary splints and appliances constructed as readily as they would wish. In many cases the treatment of patients has either to be delayed longer than the consultant dental surgeon considers advisable, or other methods of treatment which are wasteful of consultants' time and entail a longer stay in hospital for the patient may have to be employed. In the field of orthodontic treatment where the condition of the child requires hospital consultant services the waiting lists are lengthening in some instances to the point where the most opportune time for intervention passes before active treatment can begin. Finally, while not directly affecting the treatment of patients, failure to recruit or to retain the services of technicians in the dental teaching hospitals is beginning to affect adversely the training of dental students. If this trend continues it could mean that dental surgeons of the future will not be as skilled in prosthetic dentistry as they should be.

16. Although as we have shown the number of technicians available is probably more than enough to meet the demand for straightforward dentures, because of the reduced need for technicians following the introduction of the charge for dentures in 1951 the profession as a whole saw less need to recruit and train apprentices at the same rate as hitherto, and have been content to rely on the large pool of trained technicians trained before 1952. The training and experience of these technicians, as we have shown, was basically in the manufacture and repair of vulcanite and plastic dentures, and though some were undoubtedly

skilled in the manufacture of crowns, inlays, bridges, metal partial dentures and orthodontic appliances, the demand for these more sophisticated items was very limited. In 1952, for instance, only 37,000 crowns were provided in the general dental service—an average of less than 6 crowns for each trained technician working in the general dental service. In practice, moreover, as probably no more than 10 per cent. of dentists working in the general dental service regularly undertook the crowning of teeth the bulk of this work was probably done by less than 1,000 technicians. Thus experience was limited and continued to be limited throughout the 1950's; consequently few of those apprentices who were recruited had much opportunity of acquiring expertise and skill in advanced prosthetic work.

17. In the last two or three years, however, more liberal provision of crowns and inlays under the general dental service—including the relaxation of prior approval requirements with effect from July 1967—has stimulated a demand not only for a type of appliance which at present the craft of dental technician is not well equipped to meet, but also for a product of higher quality. We believe it is primarily in this field that dentists have noticed a falling off in the high standard of workmanship they took for granted at a time when the supply of a crown or an inlay was far from common.

18. The very real problem presented by this situation is exacerbated by the fact that proficiency in handling and working of the materials from which the more advanced types of dental appliances are constructed is a skill that is in great demand in other industries, notably the rapidly expanding electronics industry. Given the relatively low salaries that are now paid to dental technicians in the Hospital Service, it is not surprising that some of the more highly-skilled technicians have been attracted into industry where their experience and training fit them for highly-skilled work and commands higher pay than the health service can afford to offer. No matter how deplorable, it is probably a fact that the public services will find it difficult to maintain for dental technicians a level of salary comparable with that paid to workers with similar training and qualifications by industrial firms for whose products demand is rising.

19. The loss of some highly-skilled technicians is, therefore, inevitable and must be accepted by the profession: it need not be serious provided the craft appeals to school-leavers. Unfortunately, although the variety of work undertaken by dental technicians is wider than ever before, few school-leavers are drawn to the craft. Although the numbers needed annually to maintain the labour force at its present size is not great, the profession is unanimous in its opinion that the quality of those who offer themselves is very poor indeed. The craft has acquired an adverse reputation and is no longer recommended by careers masters or youth employment officers as a worthwhile career. Indeed, members of the dental profession when asked by parents if they recommend apprenticeship for their sons are bound to answer, in all honesty, in the negative.

20. Because inadequate pay usually tops the list of reasons for leaving or not going into a particular occupation and because the Whitley Council rates for dental technicians in the hospital service are undoubtedly much lower than the average industrial wage, there are those who believe that a substantial pay increase would solve all difficulties. While we consider a pay increase a most important factor, in our opinion it is only one aspect of a more complex problem.

21. Although hospital authorities are obliged to pay their technicians at agreed Whitley Council rates they have no means of preventing a technician who is dissatisfied with his pay from leaving the hospital service to work either for a general dental practitioner or a commercial laboratory; here rates of pay are individually negotiable and are at least as good as and in many cases better than the rates recommended by the National Joint Council. As those employed in the hospital and local authority services are a small proportion of the total number of technicians, it is only in these fields that pay is likely to be an obstacle to the retention of a stable work force. Elsewhere there need be no financial obstacle to retaining an adequate number of technicians.

22. If pay, except in the hospital service, should not be acting as a disincentive to recruitment, it is necessary to look elsewhere for an explanation. In our view it is to be found in the unsatisfactory training arrangements for apprentices. An apprentice dental technician works out his indentures, over a period of five years, usually combining practical experience under the watchful eye of a trained technician with day release or evening study at a technical college. This system has many wasteful features: the apprentice's training is geared to the needs of the practitioners in whose laboratory he is employed or whose work the laboratory undertakes, training is spread out over five years, and while in training the apprentice receives only a pittance which puts him at a serious social disadvantage as compared with his contemporaries many of whom will be earning considerably higher wages for less skilled work. Nor is there much consolation to be derived from the thought that by virtuously working out a long apprenticeship the trainee technician will assure himself in the long run of higher career earnings. In practice few trained technicians are likely to derive much financial advantage from serving an apprenticeship organized on existing lines; most school-leavers realize this and do not enter the craft.

23. In other fields modern apprenticeships are tending to become shorter and more concentrated, a higher proportion of total time being devoted to theory and much less to learning by observation. In short, training nowadays is highly organized.

24. So far the dental profession and, we suspect, those whose concern it is to further the interests of the craft, do not seem to appreciate this. Indeed, there has for many years been a reluctance on both sides to recognize that there lies within their power the means to improve recruitment of apprentices and in the short term to increase significantly the numbers of trained technicians. Any profession or craft by its very nature tends to be conservative and restrictive. There is some unwritten link between training and professional status, and an inherent assumption that traditional methods of instruction and training are necessarily the best. Because the present generation of technicians qualified after a long apprenticeship it is, not unnaturally, difficult for all of them to appreciate that it is possible (provided care is taken in the selection of candidates) to produce an equally competent technician by other, less time-consuming methods.

25. Nor is this guesswork on our part. That it is possible to produce a technician skilled enough to pass the City and Guilds examination in three years is amply borne out by the experience of the R.A.F. Apprenticeship Scheme. Under this training scheme an apprentice covers the syllabus for the City and Guilds examination in a course lasting 3 years—almost half of which is taken up with service duties, sports, leave etc. After passing the examination the qualified

technician spends a further year's practical experience at R.A.F. Uxbridge improving his knowledge and expertise before he is posted to a station where he may be working single-handed.

26. We recognize the difficulties of adapting this scheme to meet the needs of general dental practitioners. Few laboratories outside the hospital and commercial sectors are large enough to be able to provide the range of experience, the full-time teaching staff or the number of recruits (probably of the order of nine or ten a year) essential to a scheme of this kind. Hospital authorities could probably do so; so could some of the larger commercial laboratories.

27. Moreover, if they were to establish schemes of this kind they would in time produce more trained technicians than they need to fill their own establishments, some of whom would find employment in the general dental services. Technically at the present time the Minister of Health has no power to assist in the training of staff employed outside the hospital service. He cannot, in consequence, make available hospital facilities for the training of apprentice technicians indentured to commercial laboratories or general dental practitioners, unless the minimum essential training facilities provide more places than he needs to take up in order to meet the requirements of the hospital service: in those circumstances he could sell the surplus capacity. At present, however, because of the shortage of technicians in the hospital service hospital authorities have need of all the apprentice technicians they recruit and train. Ironically, having trained an apprentice, hospital authorities cannot insist that he gives them a prior claim on his services for a number of years. On completion of his indentures the apprentice is free to sell his services to the highest bidder and because employers outside the hospital service are not restricted to Whitley Council rates of pay there tends to be a migration of trained technicians from the hospital service to the private sector. Although this can hardly be called poaching it makes it difficult for the hospital service to meet its own needs and causes hospital authorities in order to retain a nucleus of trained technicians to have recourse to various dubious practises.

28. Unless present arrangements are radically altered the problems of the hospital dental service and of dental schools will grow even more acute and there will be little prospect of the service providing from its own resources the technical support needed for the planned increase in the consultant establishment.

29. As long as the hospital service is unable to prevent its trained technicians from seeking higher paid employment in the private sector so it will continue to train technicians for the private sector largely at Exchequer expense. We appreciate that questions of pay and terms and conditions of service are matters for the Professional and Technical Whitley Council 'B' and would only draw that Council's attention to the importance for the future of the hospital dental service of a realistic salary structure.

30. Traditionally every consultant likes to be supported by a technician of his own choosing: unfortunately the practical effect of this can result in the division of technical services into units of two or three, a system which prevents the development of a meaningful career and promotion structure, inhibits efficient training of students and thereby deters recruitment. Because of this hospital authorities find themselves obliged in order to retain the services of key technicians to upgrade and pay them enhanced salaries on the assumption that they are supervising other technicians. Some dental schools have sought a solution to the same problem by paying technicians as university instructors.

31. In a time of genuine shortage it is wasteful of available manpower and financially expensive that the actions of individual employing authorities in devising artificial gradings and other equally unsatisfactory stopgap methods should result in presenting the efficient deployment of technical resources. Rather, thoughts should be addressed to the problem of re-organizing available manpower in a way which, though falling short of the ideal, ensures that effective use is made of each individual. Putting it bluntly where there is no prospect of achieving an ideal in the foreseeable future, some acceptable alternative less than the ideal cannot be ignored.

32. Much as we should like to see the ideal realized we have come reluctantly to the conclusion that if the service that we as dentists have traditionally provided for our patients in hospital is not to break down in some parts of the country, if essential treatment is not to be deferred, and second best solutions are not to be adopted, the technical services of the hospital dental service will have to be reorganized.

33. Consultant dental surgeons in maxillo-facial units will still need to have highly-trained technicians under their personal supervision for the construction of the necessary appliances but technical services for other specialties and for routine patients requiring dentures etc. should be concentrated in large area units; technical staff working at these laboratories would be organized in a proper hierarchical structure which would offer opportunities for promotion and career development denied to many technicians now employed in one-man units and would allow the employment of ancillary staff of the type already found in commercial laboratories.

34. Sizeable laboratories organized on the lines we have indicated as the clearing house for prosthetic work of a wide area would provide ideal centres at which to base training schools for apprentice technicians. The curriculum could we think be similar to that of the School for Technicians at R.A.F. Halton and should be spread over a period of three years.

35. If the potential output of these schools was greater than was needed to fill establishments in the hospital service we would recommend hospital authorities to accept candidates nominated by general dental practitioners and commercial laboratories on payment of a contribution to the cost of training. This is an extension of the principles of the Industrial Training Act under which small firms who find it uneconomical to provide the training facilities needed by their staffs contribute towards the cost of similar facilities provided by larger firms. We understand that it will be some years before the provisions of that Act could be applied to the craft of dental technician, but we see no reason why a scheme similar in principle should not be devised within the Health Service. It is also appreciated that those who currently profit by introducing hospital-trained technicians into their service should make a contribution to the costs of that training. The great merit of a scheme of this kind would be to provide general dental practitioners in particular with the means of ensuring that the technicians they employed received training of a high standard.

36. Those who choose not to participate in a scheme of this kind would, we think, be thrown back increasingly on commercial laboratories as the principal suppliers of prostheses. If American experience is any criterion the picture for the future is of fewer larger laboratories gradually replacing the single-banded

dental technician. Probably about half the dentists in the general dental service still employ technicians directly. But with increased emphasis on the provision of crowns, inlays and chrome cobalt dentures it seems probable that the capital cost of providing modern laboratory facilities will eventually prove to be heavier than most single-handed or two-man practices are prepared to accept.

37. Further relaxation of prior approval to permit dentists to provide, say, crome cobalt partial dentures would undoubtedly stimulate a demand that could only be met by large laboratories that could afford the heavy capital costs of complex equipment. Even if a large proportion of prosthetic work for the general dental service were in time to be undertaken by commercial laboratories this need not be regarded as necessarily bad. Large laboratories can afford to invest in the most up-to-date and efficient equipment and because they are dealing with large-scale demand are better placed than are one or two-man units to achieve the economies of scale that help to keep down the costs of appliances and prostheses to the dentist and through him to the public. At the same time because of their size and the number and type of staff they employ they can break down the production processes.

Conclusion

38. Although at present there is undoubtedly a shortage of dental technicians in hospitals and dental schools we believe that in the general dental service such shortages as exist are mainly of technicians experienced in the construction of the more sophisticated appliances. Competition between the various branches of the profession for the services of such technicians is certain to grow and will be exacerbated by competition from industry. At present training of most of the highly-skilled technicians is confined to hospitals and dental schools who because of their inability to pay salaries as attractive as those offered by general practitioners and commercial laboratories are finding it increasingly difficult to maintain a stable labour force.

39. Their difficulties are increased by the failure of the craft to attract apprentices. In our view this is due as much to the archaic apprenticeship system and lack of opportunities for promotion and career development as to salary levels. We suggest, therefore, that with the exception of maxillo-facial technicians the hospital service should reorganize its technicians in fewer and larger area units capable of meeting the technical needs of the hospital dental service generally, including the demand for specialised appliances other than those required for maxillo-facial patients. These units would provide not only openings for promotion and career development for trained staff but facilities for providing a basic three-year training in the craft modelled on the lines of the successful R.A.F. Scheme.

40. Where circumstances permit training posts should be made available to apprentices recruited by general dental practitioners and small dental laboratories on a repayment basis.

41. Finally, though we appreciate the hazards inherent in the trend to larger units we believe that this offers the only practical and economic solution to the problems of the dental profession and the craft of dental technicians.

APPENDIX 1

Analysis of treatment supplied under general dental services to demonstrate trend in prosthetic and advanced conservative work

Treatment	Financial year 1950/51	1952	1956	1960	1963	1964	1965	1966
Dentures (plastic and vulcanite)—F/F	1,698	604	620	793	751	800	783	756
Dentures (plastic and vulcanite)—other	1,084	685	631	739	772	815	814	816
	2,782	1,289	1,251	1,532	1,523	1,615	1,597	1,572
Dentures (metal)	not available	14	13	25	31	34	35	36
Crowns—courses	23	33	37	72	132	151	175	186
—no. of teeth	26	37	42	81	147	169	196	210
Inlays —courses	not available	46	40	62	107	114	117	124
—no. of teeth	not available	51	43	66	116	123	125	131
Orthodontic treatment—courses ..	not available	17	41	55	76	86	87	94

Note.—All figures represent thousands and, except for 1950/51, relate to calendar years.

Survey of Dental Technicians in Hospital Service (England and Wales)

Summary–Boards of Governors and Hospital Management Committees—
details of staff in post at 31st March 1967

Grade	Total all ages	Number of dental technicians in each age group														
		age at 31st December 1966														
		15 yrs	16 yrs	17 yrs	18 yrs	19 yrs	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65 and over
Apprentice	51	3	5	17	9	9	8	—	—	—	—	—	—	—	—	—
Dental technician	97	—	—	—	—	1	31	13	22	7	1	3	6	8	3	2
Dental technician-in-charge	20	—	—	—	—	—	1	—	1	6	3	2	1	2	3	1
Maxillo-facial technician	105	—	—	—	—	—	26	11	11	23	14	6	7	5	1	1
Maxillo-facial technician-in-charge ..	80	—	—	—	—	—	4	4	21	11	9	7	11	11	2	—
Chief technician (1)	11	—	—	—	—	—	—	1	2	—	1	—	1	4	2	—
Chief technician (2)	2	—	—	—	—	—	—	—	1	—	1	—	—	—	—	—
Totals	366	3	5	17	9	10	70	29	58	47	29	18	26	30	11	4

Note.—'Apprentice' means a technician still under indentures.

Survey of Dental Technicians on the 1967 Register—May 1967

A. *Apprentice dental technicians analysed by age and field of employment*

Age group	Total	General dental practitioners	Hospital Service	Local authority	Commercial laboratory	H.M. Forces	Other
16	2	2	—	—	—	—	—
17	8	3	—	2	3	—	—
18	14	8	—	2	5	—	—
19	16	9	—	—	6	—	—
20–24	27	16	3	3	5	—	—
35–39	2	—	—	—	2	—	—
All ages	68	38	3	—	21	—	—

B. *Number of dental technicians analysed by age and field of employment*

Age group	Total	General dental practitioners	Hospital Service	Local authority	Commercial laboratory	Self employed	H.M. Forces	Others
20–24	141	60	11	8	47	2	6	6
25–29	115	46	9	3	38	6	3	9
30–34	283	144	17	5	49	38	2	28
35–39	238	104	22	13	30	39	8	22
40–44	156	85	9	2	14	38	—	8
45–49	150	74	11	11	6	35	—	13
50–54	196	103	17	17	13	28	3	14
55–59	106	51	9	5	8	19	5	9
60–64	112	58	11	3	6	24	3	6
65 and over	32	13	—	—	3	16	—	—
All ages	1,528	737	118	66	215	245	30	117

C. *Number of dental technicians analysed by field of employment and nature of apprenticeship served*

	Total	General dental practitioners	Hospital Service	Local authority	Commercial laboratory	Self employed	H.M. Forces	Other
Indentured apprenticeship	1,105	515	88	58	159	172	16	96
Non-indentured apprenticeship	423	223	30	8	55	73	14	21
Total	1,528	737	118	66	215	245	30	117

Notes

1. The figures represent details obtained from a sample survey of dental technicians and apprentices whose names are included in the non-statutory register maintained by the National Joint Council for the Craft of Dental Technicians.
2. Due to roundings the totals may not agree precisely with the sum of the constituent items.

Survey of Dental Technicians in Hospital Service (England and Wales) and on the 1967 Register

Age distribution of technicians expressed in percentage terms

Age Group	Technicians in Hospital Service—by Direct Enquiry	Registered Technicians—by Sample Survey
Under 25	20·0	9·2
25–29	9·2	7·5
30–34	18·4	18·5
35–39	14·9	15·6
40–44	9·2	10·2
45–49	5·7	9·8
50–54	8·3	12·8
55–59	9·5	7·0
60–64	3·5	7·3
65 and over ..	1·3	2·1

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